

PUBLIC MEETING

HALBY CHEMICAL SUPERFUND SITE

Public meeting taken pursuant to notice
before Kim A. Hurley, Registered Professional
Reporter, at the De La Warr Community Center, 500
Rogers Road, New Castle, Delaware, on Thursday, May
2, 1991, beginning at approximately 7:05 p.m.

APPEARANCES:

FRANCESCA Di COSMO
Community Relations Coordinator

ROBERTA RICCIO
Remedial Project Manager

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Toxicologist

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Ecologist

ROBERT DAVIS
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1 MS. Di COSMO: Hello and good evening,
2 everyone. I'm so glad that you could make our
3 meeting here this evening. My name is
4 Francesca Di Cosmo. I'm the community relations
5 coordinator for the Halby Chemical Superfund Site
6 which, of course, we all gathered here this evening
7 to discuss the proposed plan.

8 Before we begin with our presentations,
9 I'd like to introduce a few people that we have in
10 our audience from the State of Delaware. I'd like to
11 introduce Ms. Jane Biggs who is project manager for
12 the State of Delaware Department of Environmental
13 Resources. Also, Roger Lucio who is my counterpart
14 in community relations in this state, and Brad Smith
15 who is the program manager of the state.

16 I hope you all have a copy of the
17 agenda and proposed plan. I hope you follow along.

18 I thought I'd start this evening with a
19 brief overview of the Superfund program. It's a
20 little bit complicated program, but we have sorted it
21 out to its basic easy-to-understand steps. The
22 activities that we're going to be discussing this
23 evening will be coming under the Comprehensive
24 Environmental Response, Compensation, and Liability

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1 Act of 1980 as amended. It's a mouthful. That's why
2 we call it Superfund. It's a whole lot easier than
3 saying all of that. Also, a word you might hear
4 sometimes is CERCLA, which is a governmental acronym
5 for these words. C-E-R-C-L-A. We love acronyms in
6 the government.

7 The act was developed by Congress in
8 1980 to take care of past waste disposal problems
9 that were coming to the attention of the nation at
10 the time. You all remember Times Beach, Love Canal,
11 these sorts of mega problems which brought to the
12 attention of Congress the tremendous problem with
13 past waste disposal practices that now come back to
14 haunt us in new cases. So they sat down and
15 developed this law, the basic purpose and mission of
16 which is to continue to find these sites and to set
17 up legal mechanisms and the mechanisms by which we
18 can have them cleaned up.

19 The program is sort of divided into two
20 halves: the removal half and remedial half. The
21 activities that we will be discussing this evening
22 will be falling under what we call the remedial
23 section of the law. The other side, the removal
24 side, was created by Congress to take care of

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1 immediate health threats. The situation where you
2 might see on an evening newspaper or in the news
3 where suddenly 250 drums were discovered buried
4 somewhere that nobody knew about and have been tested
5 and found to have all sorts of bad things in them.
6 And they will come under the removal section of the
7 CERCLA law so that EPA can come in, in cooperation
8 with the states who are partners in all of the
9 Superfund activities, to remove those drums or
10 whatever the threat is to protect the health and
11 welfare of the public as well as environmental
12 concerns. So we have the authority to step in where
13 warranted on an immediate basis. Otherwise, we look
14 into the remedial side of the problems to look at the
15 long-term problem. In the case of Halby this is the
16 section again that we are going under.

17 The remedial side of the Superfund law
18 allows us the time to study the problems so that the
19 best decisions can be made as to what to do with
20 whatever contamination problem we find under the
21 studies that are conducted. In order to move along
22 the steps of the Superfund process, you will hear
23 that a site has been listed on the national
24 priorities list. That is the list that EPA puts

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1 together based on scores that sites received using
2 what they call the hazard rank system. That's the
3 system EPA has developed and uses in order to
4 determine whether a site warrants further study or
5 whether the state should remediate it under a state
6 program or other program. So that's the system we
7 use to decide if you make what they call the
8 Superfund list.

9 Another term you might hear this
10 evening or in your studies in the Superfund program
11 is the trust fund. This is basically what they call
12 the Superfund. It's a pot of money that Congress has
13 authorized for EPA to use to get the sites which are
14 listed on the national priorities list cleaned up.
15 The Superfund is comprised from taxes on the
16 petrochemical industries and has just been
17 re-authorized to extend this to 1994, I believe, for
18 an additional 5.6 billion. Previously, the fund was
19 authorized for a little over 8 billion, so now we're
20 up to about 13 billion in the trust fund.

21 Here is a little chart that we have
22 made up to illustrate what the various steps of this
23 process include. Once a site is discovered, usually
24 by the states, they bring them to our attention

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1 whereby we look at the data that has been previously
2 gathered and plug it into the hazard ranking system.
3 We give the site a score. The scoring system is from
4 0 to 100. If the site scores beyond 28.5, it's put
5 on then the national priorities list. Once the site
6 is on the list, we begin to conduct the remedial
7 investigation and the feasibility study. In doing
8 that we try to encourage potentially responsible
9 parties which have or have not been previously
10 identified to engage in the remedial investigation of
11 feasibility study using their own funds. If at the
12 time we cannot find the potentially responsible
13 parties or cannot come to an agreement with them, we
14 will go on ahead and conduct the investigation and
15 feasibility study ourselves using the trust fund and
16 we will use our enforcement authorities under
17 Superfund to recoup those dollars later so that the
18 trust fund can be replenished. EPA has a mandate to
19 do everything in its power to encourage so that we
20 can identify as potentially responsible parties to,
21 in fact, conduct the work and studies themselves. If
22 we can't do that, we have the legal authority to sue
23 and recover the money, in which case we also have the
24 legal authority to sue for as much as three times the

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1 amount to cover all of our costs as well. So we have
2 a little bit of incentive there to get the job done.

3 That pretty much concludes where we
4 are. We have just concluded the remedial
5 investigation and feasibility study for the Halby
6 chemical site, and I'd like to turn the program over
7 to Robert Riccio who is the remedial project
8 manager. She will then discuss with you the results
9 of those studies; talk about our alternatives and
10 preferred alternative for this site.

11 MS. RICCIO: I'm Roberta Riccio. I am
12 the project manager and have been for the past year
13 and a half at Halby chemical site, and I'd like to
14 thank you for all coming here this evening.

15 What I'm going to attempt to do here
16 this evening is to discuss the risks that are being
17 posed to you, the human health and the environment,
18 at the Halby chemical site and the alternatives that
19 we have reviewed in order to address and reduce those
20 risks that are present there.

21 First, I'd like to just identify where
22 this site is located for those of you who are not
23 familiar. This triangle here represents the area
24 that we investigated. This here is Terminal Avenue.

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1 This is where 495 runs. This represents Conrail
2 lines here. Christina River here. Lobdell Canal,
3 Port of Wilmington. Some of the residential which
4 some of you may be from in that area. There are
5 three areas that we concentrated on during our
6 investigation. I'd just like to go over those and
7 then I will outline for you on the map.

8 We have studied what we refer to as a
9 process plant area, and that is currently an active
10 chemical distribution facility. It's not a
11 manufacturing facility now; the lagoon area, which is
12 unlined and is a wetlands area; and then the tidal
13 marsh area which is just east of the Conrail lines.
14 This property here, and I will show you on this map.
15 It might be a little easier for you to see. Here
16 again is the process plant area. It is fenced. The
17 drainage ditch leading into the lagoon. We have what
18 we refer to as the outfall area. Here is the tidal
19 marsh. There is a fresh culvert which runs
20 underneath the railroad tracks in this tidal marsh
21 here. The tidal marsh leads into Lobdell Canal and
22 into Christina. We have several warehouses that are
23 present on the facility. Small residential area
24 which consists of three trailer homes. This area

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1 the I-495 run-off ditch which also leads out into the
2 Christina River. There is movement of water back in
3 and out of the lagoon through that location there.

4 As a result of the remedial
5 investigation, we have determined that it would be
6 more manageable to submit the site into what we refer
7 to as operable units or phases. And the operable
8 unit 1, which is the proposed plan which many of you
9 may have received addresses, operable unit 1, or
10 phase 1, consists of the process plant area
11 addressing the contaminated surface soils in that
12 area and lagoon area which also includes this
13 drainage ditch leading into the lagoon area.
14 Operable unit 2 we would continue to study the
15 groundwater contamination in that area and the
16 potential for air contamination. This outfall area
17 -- I hope that you can see this map here. I'm not
18 sure how clear it is. I'm going to try and leave
19 this up here. We have another one placed off on the
20 side, too, if that will help you. We also addressed
21 the tidal marsh area, and when I refer to the tidal
22 marsh area, we are including this area that is just
23 east of the Halby site, this triangle here.

24 I'd like to go over some of the site

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1 background and history from the Halby facility. From
2 1948 to 1977 there was a chemical production facility
3 where sulfur compounds, hair perming solutions, and
4 such were produced. From '48 to '64 waste water and
5 cooling water from the production operations were
6 discharged back into this unlined lagoon here, and
7 from '64 to '72 it was mainly cooling waters from the
8 operations that were discharged, and then from '72 to
9 '77 it was not only the discharge water, discharge
10 water consisted of cooling water and the production
11 water. However, it was treated prior to discharge
12 into the lagoon.

13 Now, the lagoon, if you will notice
14 here, it used to drain strictly out underneath that
15 culvert, underneath the railroad tracks out into the
16 tidal marsh area and then it received movement of
17 tidal water back from the Christina River flowing in
18 and out of this direction. Presently that's not the
19 case. The lagoon is breached here. The burner has
20 been breached and there is flow of river water in and
21 out up through the I-495 drainage ditch and in and
22 out of the lagoon.

23 The plant closed in 1977. As far as
24 the manufacturing of chemicals in 1977, that was

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1 stopped. Presently, as I stated, the activities
2 there are distribution of chemicals. No
3 manufacturing. And the lagoon now receives runoff
4 really from this plant area, this associated area
5 upland here, and from the railroad tracks which are
6 elevated. Again, just that the main route of
7 drainage for the lagoon is out 495 out through the
8 Christina River.

9 In 1988 we began the remedial
10 investigation at the site, and when we performed the
11 remedial investigation we looked at certain -- to put
12 it in a nutshell, we try to determine what are the
13 contaminants, where are they located, and what risks
14 do they pose to both human health and the
15 environment.

16 What I'm going to do is I'm going to
17 discuss the process plant area, the risks that we
18 determined are present there and then I'm going to go
19 through the alternatives that we looked at to address
20 those risks and give you our preferred alternative,
21 the Environmental Protection Agency's preferred
22 alternative, and I will do the same for the lagoon
23 area, discuss the risks and then the alternatives
24 that we have viewed in order to reduce the risks.

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1 For the process plant area here's a
2 summary of the risks. When we look at risks we
3 perform what's called a risk assessment, and a lot
4 goes into that, but there are three basic elements
5 that you're looking at in order to see if there's
6 actual risks being posed at the site. One is is
7 there a source of contaminants. Are there receptors,
8 either human or animal or plant. And then is there a
9 route for exposure. In this case for the process
10 plant area the source would be the surface soils;
11 contaminants there are arsenic and
12 polyurohydrocarbons (phonetic); the receptors would
13 be workers working at the facility for a long period
14 of time; and then the exposure route would be direct
15 contact. Direct contact would be possibly inhalation
16 of those contaminated soils or possible ingestion of
17 the soils. So during with the risk assessment we
18 have addressed that there is concern. There is a
19 risk being posed to the workers.

20 We then perform the feasibility study
21 and we try and determine what our objectives are from
22 looking at the risks that are being raised. In this
23 case there is. We would like to reduce the potential
24 for that direct contact to the contaminated soils.

1 We would review alternatives in order to do that and
2 then we try and come up with what we feel is the
3 preferred alternative and bring it to the public.

4 I will just go over what our preferred
5 alternative is first so that is clear and then I will
6 go through the rest of the alternatives that we did
7 review.

8 The preferred alternative, EPA's, is
9 what we refer to as alternative S-4. That's in your
10 copies of the proposed plan and feasibility study.
11 That represents stabilization of the surface soils
12 with an asphalt cap. I will give you a little bit
13 more information on that later. Estimated cost for
14 performing this remedial action is approximately
15 \$1,586,000. What we would be looking to do there is
16 to stabilize the top six inches of soil, and what I
17 mean by stabilizing is really to use some sort of
18 binding or stabilizing materials to mix with the
19 contaminated soils to render the contaminants
20 immobile so that that would reduce the potential for
21 contact with those contaminated soils. And we're
22 looking to do that in this process plant area which
23 you can see there's a fence line. That's the area
24 that we're discussing when I refer to the process

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1 plant area. Once we stabilize the soil's top six
2 inches, we would be adding an asphalt cap to cover
3 that. Then, since we would be leaving some
4 contaminants in place in the sub-surface, we would be
5 imposing deed restrictions, institutional controls to
6 limit the land use, future land use, and we will also
7 continue to have that area fenced. We would continue
8 monitoring and we would conduct what we refer to as a
9 five-year review in order to insure that the remedy
10 that we're selecting is still protective to human
11 health.

12 This represents all the alternatives
13 that we looked at in the feasibility study. What we
14 normally do in each case is look at a no-action
15 alternative in which we choose to do no remedial
16 action at all and leave contaminants in place.
17 Clearly cost is associated with each also. This is
18 \$655,000 for no action but that does represent a
19 continued monitoring which we would leave
20 contaminants in place. We still continue to analyze
21 the soils and the sediments in the lagoon and the
22 process plant area. This cost includes costs for no
23 action for the process plant and for the lagoon if we
24 were to do nothing at all.

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1 The next alternative is limited action,
2 and limited action simply includes fencing this area
3 and posting signs to warn people of the contaminants
4 that are present. And then again include the deed
5 restrictions and continued monitoring and a five-year
6 review, and cost associated with that is \$696,000.
7 These are costs that are estimated over a 30-year
8 period of time.

9 The next alternative is capping which
10 we would just place an asphalt cap over the
11 contaminated soils in that area. Again, there are
12 several items that are common to all of these
13 alternatives that would be the monitoring, the
14 five-year review, and the deed restrictions and
15 institutional controls that would be in place for all
16 of these actions except for the no-action. That
17 would only include monitoring. The estimated cost
18 for the capping itself would be \$1,188,000.

19 The next alternative, which is our
20 preferred alternative in this case, is the
21 stabilization of the surface soils followed by an
22 asphalt cap. And then if we did look at a
23 modification of this alternative it would be modified
24 by stabilizing the contaminants to depth within the

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1 process plant area. Not just on the six inches but
2 what we refer to as a pre-design study we would
3 determine what areas, if any, we would stabilize to
4 dig depth. Again, putting an asphalt cap over that.
5 The estimated cost for this is \$2,700,000.

6 And the last alternative that we
7 considered is the excavation and off-site disposal.
8 In that case we would be removing the contaminated
9 soil to a depth of approximately five to six feet and
10 disposing of that off site in a landfill somewhere
11 else. We would then go through and back-fill that
12 area and try to revegetate the area and again
13 continue monitoring, five-year review, and
14 institutional controls, and the cost associated with
15 that, I'm sure you can see, is \$5,610,000.

16 Again, for the lagoon area these are
17 the risks associated with the lagoon area. I'd like
18 to point out the risks associated with the lagoon
19 area are not to human health but rather to the
20 environment, plants, and animals. The lagoon area is
21 a wetlands area. Again, during the remedial
22 investigation and biological assessment we did some
23 testing and we determined that the sediments are
24 contaminated. The contaminants of concern are

1 amonia, arsenic, cadmium, carbon disulfide, lead,
2 mercury, thiocyanate, and zinc, and the receptors
3 would be the plants and animals in that environment,
4 and then again the exposure route would be direct
5 contact with organisms, invertebrates, slugs living
6 in that soil, in the sediments in the lagoon area and
7 the plants that are growing in that area.

8 The preferred alternative, EPA's
9 alternative--I also state that this is present EPA
10 preferred alternative--is what we refer to as L-3 in
11 the documents, what we call the soil barrier. Sounds
12 interesting. It's a pretty simple concept. Cost
13 associated with that is \$1,266,000. What we would be
14 doing in this alternative is to back-fill
15 approximately a foot of the soils in the drainage
16 ditch area back into the lagoon. We dewater the
17 lagoon and place a foot of clean soil on the top of
18 the contaminated sediments and then we attempt to
19 re-establish the lagoon as a wetlands, try to
20 revegetate that area, and again, we would also
21 include deed restrictions, fencing the property, and
22 continued monitoring with a five-year review.

23 There are all the alternatives that we
24 looked at. Again, we were trying to eliminate the

1 direct contact with the contaminated sediments and so
2 first we looked at no action. You will see there's a
3 0 cost there. I pointed out before the costs
4 associated with no action. Same as in the
5 alternative for the process plant area. Limited
6 action is very similar to limited action for the
7 process plant area. Limited action would be again
8 fencing and posting warning signs in the lagoon area,
9 continued education to let people know the concerns
10 in that area, the contaminants that are still
11 present, continued monitoring, and five-year review.
12 And the cost associated with that alternative is
13 \$75,000.

14 The next alternative is the soil,
15 barrier which is our preferred, and the cost
16 associated with that is estimated to be \$1,266,000.

17 The next alternative you will see is
18 in-situ stabilization. In-situ means in place.
19 Again, it's similar to what we were doing here as far
20 as stabilizing the sediments within the lagoon to try
21 and render the contaminants immobile for movement,
22 and we would do that in place without moving the
23 material out of the lagoon area. We would dewater,
24 of course, try to dewater the lagoon and stabilize in

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1 place and then attempt to put a layer of soil on top
2 and try to re-establish the wetlands in that area.
3 Again, that includes the elements that are common to
4 each. The monitoring, five-year review, and
5 institutional controls, and the cost associated with
6 that is \$3,421,000.

7 And the last, again, is very similar to
8 what we looked at for the process plant area. It's
9 excavation of the lagoon sediments with off-site
10 disposal. Again, then we would back-fill the lagoon
11 with clean material and try again to re-establish the
12 wetlands in that area. The cost associated with that
13 is \$11,232,000.

14 I'd like to go through what the total
15 costs associated with operable unit 1 are. That will
16 include again the process plant area which we were
17 looking at stabilizing these soils and placing the
18 asphalt cap over it and lagoon area with the soil
19 barrier. The total costs associated with performing
20 this remediation is \$2,852,000.

21 I'd just like to go through some of our
22 justification for choosing these alternatives. We
23 did look at quite a few. Again, for the process
24 plant area I'd like to point out we're trying to

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1 reduce the risk to the workers at the facility and
2 eliminate the direct contact with the surface soils.
3 By performing the stabilization and putting the
4 asphalt cap over the top, we would minimize the
5 direct contact to humans. We would be reaching our
6 clean-up goals which we established during the
7 remedial investigation, and treatment of the top six
8 inches of soil, the stabilization treatment acts as
9 two-fold: First, that it would provide a base, solid
10 base for the asphalt cap, and in addition, it would
11 provide an extra layer of protection. We're trying
12 to allow as much as possible the present operations
13 that are there to remain intact and to disturb that
14 as little as possible, and there is movement of
15 trucks and forklifts in that area. With just the
16 asphalt cap the potential of cracking that asphalt
17 cap was a little bit greater than it might be in
18 another area where activity did not occur. If the
19 asphalt cap cracked, we would have that additional
20 six inches of stabilized soil that add protection
21 until we could come in under our operation and
22 maintenance program and fix the cracks, any of the
23 cracks or problems with the asphalt cap. Again,
24 hopefully taking a phased approach so that activities

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1 at the facility could still be ongoing. How we would
2 do that is just do a section at a time. Remove the
3 soil, stabilize it, put it back in place, and then
4 cap that area and move on to another area in that
5 process plant.

6 For the lagoon area, again, we're
7 trying to eliminate the direct contact to organisms,
8 to the sediments, the contaminated sediments. By
9 placing that soil barrier we feel that we will
10 attempt to isolate some of the contaminants of
11 concern and we would be meeting our clean-up goals
12 that were established as part of what we refer to as
13 the assessment group at the Environmental Protection
14 Agency and we would, hopefully, be re-establishing
15 the wetlands area, which was one of our main concerns
16 in going into the feasibility study. We realize that
17 this was a wetlands area and that we were attempting
18 to try and keep that. Re-establish that as a
19 wetlands area.

20 At this time, I guess, one of the main
21 reasons I'm here is to solicit comments from the
22 public. I'd like to emphasize that this is the
23 Environmental Protection Agency's preferred
24 alternative. It's not necessarily the alternative

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1 that will be chosen. That's why we're here. Since
2 the public comment period was opened on April 19th,
3 we have received several comments from the State and
4 I'd like to point out that at this time EPA is here
5 considering moving the lagoon area into operable unit
6 2 so we can do some additional studies before we make
7 a final selection, I guess, of a remedy for that
8 area. And I guess at this time I'd like to turn it
9 over to Francesca.

10 MS. Di COSMO: Now that we have gone
11 through the alternatives, I thought I'd just put this
12 back up for a minute. So what Roberta has done is
13 taken us through the remedial investigation and
14 feasibility study. Presented all the alternatives
15 that we reviewed, what our preferred alternative is
16 in time, why that is. Now, the next step is signing
17 the record of decision. Before we sign a record of
18 decision and put it into a legal document of what the
19 alternative and actual remedy for operable unit 1
20 will be, we are required to have a 30-day comment
21 period and bring plans to the public and solicit
22 comments. And that's, as Roberta said, the purpose
23 of our meeting here tonight. To do that you may see
24 that we have a court reporter here. This is a very

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1 official meeting with making sure that we take down
2 all the comments properly. So when I call for
3 questions and comments, if you would stand and say
4 your name clearly, give us your question or comment,
5 that will help us to facilitate the record.

6 To help us answer any questions or
7 comments you may have we have some additional people
8 here this evening from EPA. I'd like to introduce
9 them at this time. Peter Ludzia, acting chief of the
10 Delaware Maryland Superfund Section, Region III;
11 Dr. Richard Brunner, EPA toxicologist;
12 Bernice Pasquini, hydrogeologist. Said it all.
13 Diane Wehner, ecologist. And Robert Davis who is
14 also an EPA ecologist. I think that's all to do on
15 this for now.

16 So now that we have established
17 everything, let's have our first question and
18 comment.

19 MARVIN THOMAS: The recommended solution
20 to the problem, is it a permanent solution? I heard
21 you mention about the asphalt may be cracked at some
22 point in time, so is this recommendation a permanent
23 solution to the problem?

24 MS. RICCIO: Well, yes. We are

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1 considering further for the process plant area that
2 being a permanent solution. Estimated, I guess,
3 lifetime or a cap and approximately 30 years. We're
4 not stating that the cap will last forever. That's
5 one of the reasons why we include in the cost
6 operation and maintenance costs. We know that we
7 will have to go back and continue to look at that
8 asphalt cap to make sure there's no cracking and then
9 take care of those problems as they arise. One of
10 the things, too, again, with the stabilization acting
11 as a base is we're hoping that that will provide an
12 additional support to movement on the property.

13 VAL HAHN: Along with his question, if
14 you're looking 30 years down the road, it sounds like
15 a roof that needs replacing. Who bears the costs of
16 that 30 years down the road?

17 MS. RICCIO: Good question. What occurs
18 is once we go through and do this, again, we look for
19 responsible parties to do the work, but the operation
20 and maintenance costs a lot times are associated with
21 the State also. Depending on who we actually get to
22 perform this work. Some of the operation and
23 maintenance costs are incurred by the State also, the
24 State of Delaware.

1 VAL HAHN: So 30 years from now they
2 would still be responsible for doing that?

3 MR. LUDZIA: Let me try to build on
4 something Roberta said. The statute and the remedies
5 were based on a 30-year useful life because that's
6 what they recommended. We project useful life. It's
7 difficult at this time to project what the status of
8 anything is going to be 30 years in the future, just
9 like in 1960, who ever thought we would have a
10 Superfund and would be dealing with these kinds of
11 problems? The idea of having operation and
12 maintenance associated with the Superfund remedy is
13 that on a periodic basis people do go out there and
14 evaluate the conditions at the site and if there is a
15 need to take action actions will be taken. I don't
16 think that the statute itself specifically says that
17 the State of Delaware will automatically assume
18 responsibility for every Superfund site, but there is
19 an ongoing problem. I doubt with the publicity that
20 Superfund is going to get now that people are going
21 to turn their backs and forget about it. The
22 property is not going to be easily transferred to
23 another party who's going to forget that it's a
24 Superfund site.

1 VAL HAHN: More specifically, will the
2 owners of that process plant get stuck with having to
3 replace that asphalt 30 years from now without the
4 help of all the laundry lists of PRP's?

5 MR. LUDZIA: Again, I don't know that
6 there is a specific answer to the question because I
7 don't even want to predict what's going to happen 30
8 years from now. I can only say from the EPA's point
9 of view there will be an ongoing operation and
10 maintenance program. It's unlikely that we're going
11 to suddenly walk away from not only this site but
12 hundreds of other sites across the country and
13 abandon them.

14 MARY THOMAS: When you talk about doing
15 the lagoon cleanup, would you stop at the property
16 line or would you go into the tidal marsh area,
17 Lobdell Canal, and where contaminants have flowed?
18 Are you just limiting yourself to the property?

19 MS. RICCIO: At this point this proposed
20 plan addresses just this property here right within
21 the triangle here. We are going to continue to study
22 the adjacent property, but we are discussing right
23 now the lagoon area itself.

24 MARY THOMAS: You're not concerned about

1 the contaminants that are in the groundwater leaching
2 back and forth and undoing what you have done?

3 MS. RICCIO: To a certain extent we
4 are. Again, we're looking to eliminate the direct
5 contact, I guess. We know that there is a risk being
6 posed to the public for some years now. The levels
7 of contaminants are very high in that lagoon area and
8 the sediments as opposed to some of the areas that we
9 haven't investigated out here in the tidal marsh
10 area. We are going to continue to investigate the
11 effects of the site on the groundwater contamination
12 in the area.

13 MARY THOMAS: In that same vein do you
14 believe soil capping of the lagoon would be
15 sufficient to stop the groundwater contamination or
16 would you look at putting a line situation?

17 MS. RICCIO: We don't at this time think
18 that that would be sufficient to reduce leaching,
19 leaching of those contaminants into groundwater.

20 MS. WEHNER: If I could clarify that
21 answer. If you look at the distribution of
22 contaminants in the lagoon area, the concentrations
23 of contaminants are much greater at the surface than
24 they are as you move down through the lagoon

1 sediments. So it's thought that the majority of the
2 contamination in the lagoon is from historical
3 surface deposition into the lagoon rather than
4 contaminants leaching from the groundwater into the
5 lagoon area. That's why it's being addressed as
6 trying to eliminate the threat posed by the heavily
7 contaminated sediments on the surface of the lagoon.

8 MARY THOMAS: The operable stage 2,
9 groundwater, when do you expect that study to be
10 done, do you have any idea at this point, or to be
11 presented?

12 MS. RICCIO: What we are attempting to
13 do is continue this remedial investigation, pull this
14 out and deal with what we know right now, and then
15 continue, once we have a contractor in place, to
16 investigate that area. So we're trying to do that
17 again right within the next upcoming year also to
18 just continue really with our investigation, not to
19 stop it at this time.

20 VAL HAHN: In that light, then, the
21 triangle is now called the Halby site. If the lagoon
22 becomes part of the tidal marsh area, is that
23 operations unit No. 2 the Halby site also or does
24 that have another name?

1 MS. RICCIO: We may have to rename it.
2 I guess we haven't really considered that yet.

3 VAL HAHN: It's my understanding that
4 the triangle was owned by Halby Chemical Company and
5 is now owned by other companies, but the tidal marsh
6 area are completely different PRP's, so by putting
7 the lagoon -- if you were to switch it into operation
8 unit No. 2 you get the owners twice, don't you?

9 MS. RICCIO: Well, I'm not sure what you
10 mean by "twice," but what we would do, whenever we
11 attempt to take an action at a site, we look at the
12 PRP, or potentially responsible parties, for each
13 action. At least under this operable unit, if we
14 were just looking at the process plant area, then we
15 would be going through with discussions with the PRP
16 for that area. If the lagoon goes into operable unit
17 2, then again, we would be dealing with the
18 responsible parties for that entire area.

19 VAL HAHN: Which would include the coke
20 and coal people.

21 MS. RICCIO: Right. We would look at
22 operators, past owners, and such.

23 MS. WEHNER: If I could add to that.
24 What we're dealing with now if we were to study that

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1 area of the tidal marsh on the other side of the
2 triangular boundary, what we're doing is tracking the
3 contaminants from the Halby site. In fact, that
4 would still be considered a part of the Halby
5 investigation, under the EPA files Halby
6 investigation. We would be tracking contaminants in
7 the Halby site to see the extent, exact extent, to
8 which they do occur. So again, just extend that
9 investigation to try to address all of the problems
10 associated with Halby and find where they end.

11 RALPH DOWNARD: I was wondering if you
12 re-establish a wetlands within the lagoon, isn't
13 there a danger of the plants that you re-establish
14 there tapping into that contaminated soil or a
15 possibility of tidal action flushing away some of the
16 clean sediment and exposing some of the contaminated
17 soil? Has that been addressed at all?

18 MS. RICCIO: That is something we have
19 looked at. We have talked to several people, I
20 guess, as far as the amount of sediment that may be
21 appropriate for clean soil fill to be put into that
22 area. Again, what we would like to do is cut off
23 this area, the present drainage ditch area, and
24 re-open it back into the tidal marsh area. It's our

1 assumption, I guess you could correct me if I'm
2 wrong, that most of the life in the wetlands area
3 would be living within that top foot of soil
4 establishment of plants and the invertebrates that
5 live within the lagoon area and feel that one foot
6 should be sufficient. Again, we would be looking
7 during what we call the pre-design, remedial design
8 to see if that would be appropriate and that the
9 movement -- I guess there have been several studies
10 that have been done as far as the amount of sediment
11 that may be necessary in an area in order to allow
12 block movement or try to eliminate, I guess, or
13 isolate the sediments, contaminated sediments, from
14 the surface and surface water, and I guess we had
15 seen in some of the studies we had looked at 22 to 35
16 centimeters, I guess, in some of those areas. We
17 feel that right now one foot would probably be
18 sufficient, although we don't know for sure and we
19 would continue monitor that area to insure that the
20 later was remaining in place. Probably would be some
21 movement. We are also looking at the type of
22 material, maybe a heavier soil material to be placed
23 in that lagoon in order to hopefully insure that they
24 will remain in place and intact in the sediment

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1 area.

2 MR. LUDZIA: During the remedial design
3 phase, when that lagoon will eventually be opened up
4 to lower tidal marsh area, there will be some looking
5 at what the tidal movement of the water along the
6 surface is through that system and if necessary
7 perhaps a one-way flap at the entrance from the
8 lagoon drain into the tidal marsh area that will
9 allow movement of water in and out but eliminate
10 perhaps any severe swarrowing of the lagoon area that
11 would be dragging out the clean sediments. That
12 would be a consideration.

13 MS. WEHNER: Also, those plants, they're
14 aroemic plants.. They would have the roots at the
15 surface. Tend to hold soil probably better. They
16 wouldn't want to go down in the and aroemic zone.

17 RALPH DOWNARD: What about frogs and
18 turtles in the wintertime?

19 MS. WEHNER: They would be fine.

20 RALPH DOWNARD: It appears that the
21 current remediation is primarily dealing with on site
22 contamination. It appears that you really have done
23 nothing to see what's moving off site, and it appears
24 premature to design a remediation plan without

AR500080

1 knowing what's exiting the site.

2 MS. RICCIO: We have investigated this
3 tidal marsh area. We have sampled. We have
4 attempted to track vibration of contaminants off that
5 area. That's one of the reasons why we're continuing
6 looking into this area under operable unit 2.
7 However, we do feel that the risks that are being
8 posed and present right now at this facility do
9 warrant action at this time, so therefore, we try to
10 address those risks as soon as possible as soon as we
11 have established them and then we will continue to
12 investigate further off site in that area.

13 RALPH DOWNARD: Are your preliminary
14 results, then, from the off-site investigation?

15 MS. RICCIO: Preliminary results --
16 well, we have seen there are levels of, again,
17 metals, heavy metals, in that tidal marsh area. They
18 seem to be increasing with depth, though, as opposed
19 to in the lagoon area we see higher levels on the
20 surface sediments than with depth. In the tidal
21 marsh area we are seeing an increase with depth in
22 some of the area.

23 I want to discuss the risks to the
24 environment. We performed toxicity bioassay studies

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1 solid phase, taking the actual sediments and running
2 bioassay tests, putting in organisms to see how long
3 they survived, in general terms. What we're finding
4 here is we did find toxicity here. In this upper
5 tidal marsh area we didn't find it. We did see that
6 there were toxic effects there. However, we did see
7 some down in the lower area, and we have seen some
8 site-specific contaminants in that lower area.
9 That's one of the reasons why we're going to
10 continue. Those results were fairly recent, and
11 that's one of the decisions that we're putting that
12 into operable unit 2 and deciding that we need to
13 further investigate that area. That's pretty much
14 that.

15 FRANCIS REED: Do you think that the
16 no-action alternative is not protective of human
17 health and the environment at this time? I'm
18 wondering now that the plant is just doing
19 distribution, what about those folks that were there
20 when it was doing actual chemical-making, I wonder
21 how their health is affected.

22 MS. RICCIO: I guess at this time we
23 have no way of really addressing what risks that have
24 been posed. What we do look at in performing the

1 risk assessment is for the worker exposure we looked
2 over a 30-year period of time, and there's a lot of
3 assumptions that go into doing that first
4 calculation. We try to err on the side of being more
5 protective.

6 FRANCIS REED: At that time they didn't
7 have the protections in that new plant that they
8 might have at this time.

9 VAL HAHN: In the chemical process
10 plant, if the objective is to reduce human contact
11 and as the lady just pointed out it's been like this
12 since 1946, is it worth the extra \$400,000 between
13 your alternative 3 and your alternative 4? How do
14 you justify \$400,000 on the outset that you might get
15 a crack if that isn't patched right away?

16 MS. RICCIO: Well, again, when we look
17 at the costs, we're looking at the cost
18 effectiveness. We feel that the additional
19 stabilization will attempt to not only add an
20 additional layer of protectiveness but also a base
21 for that asphalt cap and hopefully trying to
22 eliminate some of the future cracks and try to reduce
23 some of our operation and maintenance costs. Those
24 things are considered. So that's not only the human

1 health protectiveness but to also try and extend the
2 life of that cap.

3 VAL HAHN: If the soil there now has
4 been in place since 1946, I wouldn't expect much
5 shifting at this stage of the game. I would think
6 it's fairly well packed.

7 MS. RICCIO: Right. But presently it's
8 pretty much just the dirt there. There's no cap.
9 There's no asphalt cap or movement, I guess, of the
10 vehicles on that area, sort of like we go out and
11 drive on the road. The more you're driving on that
12 road the soil itself will probably give some and the
13 stabilized soils would also give. It's not
14 necessarily a hard -- to my understanding, it may be
15 more of a clay texture to be able to give a little
16 bit which would also help to reduce some of that
17 cracking.

18 MR. LUDZIA: You have also got the
19 situation where you have got the dirt road. The tire
20 tracks, two tire tracks all the time. If you improve
21 that situation by paving a lot a large area, the
22 vehicles are no longer going to be confined to
23 those. They're going to be moving up to other areas
24 that haven't been used before. You would get

AR500084

1 differential settling because of the compacted areas
2 versus the loosened areas. This is one of the
3 reasons why we think it would be worth the money at
4 this point in time to stabilize the entire site for
5 the purpose of providing a firm base for the entire
6 process plant area.

7 CHARLIE HAHN: Following up on that,
8 when you talk about stabilizing the soil, is that
9 done with like a chemical or something? What I was
10 wondering is as opposed to just bringing in six
11 inches of clean soil and putting it down and then
12 putting a cap, are you digging up contaminated soil
13 and then treating it somehow and then compacting it
14 again?

15 MS. RICCIO: That's exactly right. What
16 we would be doing again, our design phase would be to
17 perform a treatability study to determine what may be
18 the best components or materials to use in that
19 stabilization process. At other sites, other
20 stabilization processes, sometimes they may use
21 cement or asphalt or some other chemicals or a
22 combination of that. What we would attempt to do is
23 actually take samples, look at the soils, and do a
24 study to try and determine what may be the best mix

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1 in order to use at the site.

2 MARTINA ANGELAKOS: Do you presently
3 have any monitoring wells in the area or do you have
4 any plans to put some in?

5 MS. RICCIO: We have monitoring wells.
6 In fact, this might be the easiest way to show, if
7 you'll give me a minute, some of the wells we have.
8 Some of them are clusters. Clusters of wells here
9 within the triangle area. We have some that were
10 installed from previous investigations. The State
11 and the City of Wilmington did some investigations.
12 We do have a salt pile area here. These dots
13 represent the monitoring wells that we have looked
14 at. Again, on the other side of the tidal marsh
15 there are two and then there are some downgrading
16 here. Groundwater flow of at least in the three
17 aquifers underlying the site in the upper and inter
18 aquifer, the groundwater flow in this direction is
19 towards the river, and the deeper -- the lower
20 Potomac is in this southerly direction here. It's
21 the opposite direction. And we are considering
22 installing additional wells as part of operable unit
23 2.

24 HERB BALLMAN: I have a thought.

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1 Originally, when this was a chemical plant, the
2 lagoon, it was at the end of the water flow
3 essentially, wasn't it? We knew it was at the far
4 end. There was no water coming in from the river.
5 There was no interstate 495. That was essentially
6 the end. There are wells and there still is a lot of
7 industry around there. There are, I will say,
8 canals, ditches, what have you, that do flow into the
9 tidal marsh area, and what I'm thinking is some of
10 these other plants or I know, for instance, the road
11 Terminal Avenue where it goes into the Port of
12 Wilmington there's a lot of contamination where you
13 have your pointer there, there's a lot of
14 contamination there. And the people that are
15 potentially to be held to pay for this cleanup, I
16 think it would be a little difficult to put a
17 complete burden on Halby chemical or whoever owns
18 this site currently because I feel that there has
19 been over years contaminants dumped into the water.
20 If that lagoon was the end of it and like you're
21 saying you're finding different kinds of heavy metals
22 in the tidal marsh area there, it opens a Pandora's
23 box as to whose responsible and who is -- apparently,
24 Halby is the greater one of them, but if we clean up

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1 the lagoon without addressing the rest of it, I
2 believe we're just opening ourselves up for
3 additional contamination. That's a layman's
4 opinion.

5 MS. RICCIO: We do know that there are
6 drainage lines into that lower tidal marsh area. Our
7 additional investigation will explain what we call
8 the potential responsible party search and try to
9 identify them. Again, though, we do know at least
10 the contaminants that we have found in the lagoon and
11 process plant area are some of the same compounds
12 that were used in association with this processing in
13 that area. Again, we will just continue and try the
14 best we can to identify as much as possible the
15 responsible parties.

16 MR. LUDZIA: The idea of responsible
17 parties -- there are three categories of responsible
18 parties. There are owners, previous owners, there
19 are operators, there are transporters and
20 generators. As we continue the investigation, if we
21 find other areas of contaminated property, we will
22 likely find more owners. We might find the
23 contamination is coming from other sources, someone
24 who would identify more generally. As we continue

1 the study to find the source of this contamination,
2 we would then be identifying additional responsible
3 parties and then approaching them with the idea that
4 they should be paying for the cleanup as well. It's
5 kind of an evolutionary process as we continue our
6 studies. We go out, we tap in on additional
7 responsible parties if that's what we find.

8 HERB BALLMAN: I feel this whole area
9 used to be a plant right there to the Port of
10 Wilmington. I don't know if that could contribute to
11 that or not. I even forget the name of it. There
12 was a plant right in the port. There's just a lot of
13 stuff that has been dumped in these waters over the
14 years. And once this is decided which remedial
15 action to take, will the federal government come
16 after the current owners of the site to pay for this
17 or will it go after the people that theoretically
18 contaminated it?

19 MS. RICCIO: As Peter identified, we not
20 only look at owners but we look at generators and
21 previous owners, present owners in our responsible
22 party search. We would be addressing them and
23 contacting them and asking them to come to
24 negotiations and then, I guess, working out the

1 viability of them performing the remedial action.

2 MS. DI COSMO: That's the negotiation
3 phase.

4 MARVIN THOMAS: Over what time period
5 could you estimate your clean-up efforts to take?

6 MS. RICCIO: For the operable unit 1,
7 again, the next phase really will be to go through
8 and identify responsible parties and go into
9 negotiations to see if they would be willing to take
10 on the remedial action, remedial design or remedial
11 action. We go into the remedial design phase prior
12 to going out there on the sites and performing any of
13 the remedial action. It would be approximately two
14 to three years down the road before we are actually
15 to complete the action really.

16 SUKU JOHN: I'm curious about the tidal
17 marsh. You said that concentration increased with
18 depth. Could you give any idea of what depth -- what
19 was the maximum concentration, what depth was it?
20 What was the maximum concentration and at what
21 depth?

22 MS. RICCIO: That would depend on what
23 contaminants we're looking at. I might be able to
24 show you some -- we did go 10 to 12 feet in some of

AR500090

1 the areas. You're mainly concerned with the tidal
2 marsh area. Again, here there were several --
3 there's another slide of some of the contaminants
4 that we found in this area. But addressing the tidal
5 marsh area you will see here there were several
6 samples taken with depth. We took a range of 0, 20,
7 30 inches. 0 to 60 inches and 0 to 72 inches here,
8 and you will see there are arsenic levels within the
9 surface area. It's about 80 ppm, or parts per
10 million. Then we have 70 and then the deepest sample
11 is 1,400 ppm, parts per million, the arsenic. Then
12 again the zinc values will increase again at that
13 depth, 330 to 370 to 5,700 parts per million. And
14 then again you can see these samples that were, taken
15 here the sediments and the increase in the arsenic
16 values, again an increase in the zinc values. I'm
17 not sure if you can see those numbers. We do have
18 this information. All of the data is available in
19 the administrative record, in the remedial
20 investigation, and feasibility studies. Again, down
21 in this location you will see an increase mainly in
22 arsenic and zinc values. Some of the copper and also
23 lead samples have increased.

24 RALPH DOWNARD: Two things. One, can

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1 you tell us why the zinc is reversed in the lagoon?

2 You see concentration highest at the top.

3 Second thing, have you taken samples
4 below 72 inches?

5 MS. RICCIO: Basically not in this
6 area. We have over in this location. About the same
7 depth, though, and we aren't seeing the levels.
8 Again, the levels were higher in the surface. Some
9 of these samples down in this location are taken at
10 greater depth. No, they were not below the 72
11 inches. Here you will see that there were several
12 samples that were taken in the drainage ditch which
13 had that same percentage. There was an increase in
14 depth with the metals, but out in the lagoon area we
15 have our highest values at the surface for arsenic
16 again at 2,900 ppm, and then the depth is 134 parts
17 per million. Again, with the zinc we will see very
18 high levels here, 36,400 parts per million, and then
19 it decreased down to 582 parts per million. Then
20 some of the other locations, arsenic is higher here
21 and zinc, again, in the upper sediments and then
22 there's a decrease.

23 RALPH DOWNARD: Why is the order
24 reversed?

1 MS. RICCIO: I don't personally know.
2 We have considered several things of possibly the
3 movement, the tidal movement in and out of that area,
4 possible deposition and movement of the upper
5 sediments in that section, dropoff as elevations
6 change, but we really don't know at this time.

7 MS. PASQUINI: This is the reason why we
8 save the tidal marsh and groundwork for operable unit
9 2. That's one of the main reasons that we wanted to
10 take soil samples at depths to get an idea if
11 possibly it is groundwater or some type of
12 sub-surface drainage remnant from historical facility
13 operations. So to answer your question, we are aware
14 that there is this phenomenon in this area, and we
15 will look at it.

16 RALPH DOWNARD: Correct me if I'm
17 wrong. Don't these compounds generally hold very
18 tight to soiled particles; that they're not usually
19 soluble particles? Could it not be that the
20 particles in the tidal marsh were deposited with
21 erosion from the surrounding landscape and you had
22 higher concentrations early on and they decrease with
23 time so that's why you're seeing a decreased in the
24 top where the area of the lagoon would be more of a

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1 constant and a smaller deposition of sediment in
2 there? You wouldn't get the layer that you may get
3 within tidal marsh.

4 MS. PASQUINI: Yes. You say it goes
5 down to 72 inches. It's 72 inches over four. It's
6 not possible. That's why we like to investigate
7 further. Investigate for operable unit 2.

8 KENNETH SHOCKLY: I have read an article
9 in a police engineering magazine that was conducted
10 in downtown Washington. They had studied how much
11 contamination was done by cars from tire wear and
12 motor oil and such, and I think they had estimated it
13 was like 55 tons of what would be termed hazardous
14 was produced in this downtown region. Do you
15 consider I-495 to be PRP in the sense that the
16 contaminations, sediments that they mentioned were
17 contaminating the roads were zinc and other heavy
18 metals and aromatic hydrocarbons? Is runoff from
19 I-495 going to still contribute even if the area is
20 paved, it's going to increase the runoff?

21 MS. RICCIO: It's true. What we did do
22 during our investigation, we did sample, I guess, on
23 a gradient in this area to see what some of the
24 levels are possibly upgrading gradient sources, and

1 the levels again of some of the metals are not as
2 high, at least as high as we are seeing in that
3 lagoon area. We can't strictly say that all the
4 contamination metals in that area are strictly from
5 the Halby site. Again, as we continue look at
6 migration on site it will direct us to other sources,
7 too.

8 MARY THOMAS: Are you looking at
9 reducing the levels of the contaminants or locking
10 them in place or a combination of both? And
11 specifically with the sediments in the ditch line, I
12 didn't see anything in the report that specifically
13 said what you're goal was with them, locking them in
14 place or reduce the cells of certain contaminants.

15 MS. RICCIO: In the drainage ditch
16 area?

17 MARY THOMAS: Yes.

18 MS. RICCIO: Basically, what we are
19 doing here is really just keep the grade, the same
20 from the run-off area. Really just to keep the grade
21 the same. Since we would be adding a one-foot area,
22 we would consider removing one foot of contaminants
23 here and placing the soil over that. Not to treat
24 them, but again, keep the contact but also to keep

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1 the run-off grade the same throughout the whole
2 area.

3 MS. DI COSMO: Next question or
4 comment.

5 RALPH DOWNARD: We have seen
6 contamination on other sites as well as this one.
7 Why was this one chosen to be put on the NPL?

8 MS. RICCIO: Good question.

9 MS. DI COSMO: Through our Superfund
10 process this site has been identified and has moved
11 along in the process.

12 RALPH DOWNARD: Some of these other
13 sections may be added eventually? They're being
14 studied?

15 MS. DI COSMO: Sites are brought to
16 EPA's attention all the time. We go through all of
17 those steps, each and every one. They may or may not
18 score high enough in the hazard ranking system to
19 make the NPL, and then continue along the process of
20 an IRFS and so on. Keep in touch.

21 MR. LUDZIA: It can be sort of engulfed
22 in the definition of a site as may happen with Halby
23 as we extend the study area and look for the edges of
24 contamination associated with a particular site.

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1 MS. DI COSMO: That's a point. The
2 definition of site is not necessarily one's site
3 boundaries, property lines. The site is defined as
4 the extent of contamination.

5 VAL HAHN: In 1987 there was an article
6 in the newspaper about plans to widen Terminal Avenue
7 because with now 495 and the port doing so well
8 there's a lot of traffic. The article basically said
9 that they hit a roadblock because of the Halby site
10 and the contaminated soil. A comment would be if
11 you're not, shouldn't you be in contact with Delaware
12 transportation?

13 MS. RICCIO: Yes. In fact, that was
14 brought to our attention earlier today, and we will
15 be contacting them also.

16 MS. DI COSMO: Kept up to date on the
17 developments of this project.

18 Next question or comment?

19 That's it then. Before you go I'd like
20 to remind you that the 30-day comment period extends
21 to May 20th. So if you have additional questions or
22 comments that you would like to make after this
23 evening, you can write them into the office and
24 address them to Roberta. The address is in your

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1 proposed plans, and with that being all for this
2 evening, thank you very much for coming.

3 (The meeting was concluded at 8:20
4 p.m.)

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C E R T I F I C A T E

STATE OF DELAWARE:

:

NEW CASTLE COUNTY:

I, Kim A. Hurley, a Notary Public
within and for the County and State aforesaid, do
hereby certify that the foregoing public meeting was
taken before me, pursuant to notice, at the time and
place indicated; that the meeting was correctly
recorded in machine shorthand by me and thereafter
transcribed under my supervision with computer-aided
transcription; that the meeting is a true record; and
that I am neither of counsel nor kin to any party in
said action, nor interested in the outcome thereof.

WITNESS my hand and official seal this
6th day of May A.D., 1991.

KIM A. HURLEY
Notary Public-Reporter

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